express melanoma risk among cancer patients as compared with the general population.

Results 4101 patients with a first invasive cancer were subsequently diagnosed with a melanoma. In the first year after diagnosis, risk of being diagnosed with melanoma was more than 10-fold higher among skin cancer patients as compared with the general population (SIR=16.5 95% CI 15.1 to 17.9). The risk dropped to 6.9 (SIR) (95% CI 6.4 to 7.5) 2–5 years post-diagnosis. After non-skin cancer, this drop is much less significant, from SIR=1.6 (95% CI 1.4 to 1.7) to SIR=1.4 (95% CI 1.3 to 1.5) in 0–1 years and 2–5 years after first cancer, respectively. No trend of SIR during the study period was observed.

Discussion and Conclusion Intensive clinical check-up among skin cancer patients may explain the inflated risk of second melanoma, especially in the first year post-diagnosis. Our findings suggest that increased surveillance and awareness were not the sole explanation for the rising incidence of melanoma in the Netherlands.

P2-160 RIGHT-SIDE SHIFTING OF SECOND COLORECTAL CANCER-IMPLICATIONS FOR AETIOLOGY AND CLINICAL RELEVANCE

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Background Colorectal cancer (CRC) is a heterogeneous disease: cancers in proximal, distal colon and rectum show differences in carcinogenesis pathways (proximal colon cancer related to microsatellite instability vs distal colon cancer to allelic losses), epidemiological patterns and clinical characteristics. By assessing the risk of second primary CRC among CRC patients, we aimed to shed light on the aetiology of multiple CRCs and its clinical relevance.

Material and Methods We analysed the risk of second CRC among 123 253 first CRC patients from the Netherlands Cancer Registry data. Standardised incidence ratio (SIR) was computed to compare risk of second CRC among CRC patients with the general population.

Results During a median follow-up of 2 years, 2720 second CRC were diagnosed in CRC patients. More than 50% of second CRC were located in the proximal colon translating into a fourfold RR when compared with general population (SIR=4.1, 95% CI 3.9 to 4.3). Although we did not observe specific high risk pairs between sub sites of the first and second CRC, interestingly, right-side predomination of second CRC risk was clear. The right-side shifting of second CRC persists even after 10 years of follow-up in all patients' sub-groups that is, synchronous and metachronous cancers, by follow-up time and sub-sites of first CRC.

Discussion and Conclusion Our results highlighted the crucial role of microsatellite instability in the development second CRC. Due to the persistently elevated risk of a proximal colon cancer, surveillance on this specific site is recommended, preferably using FOBT.

P2-161 INCREASED MELANOMA RISK AMONG MELANOMA PATIENTS

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Background Study on risk of subsequent melanoma among melanoma patients is scarce.

Objective To investigate melanoma risk in melanoma patients.

Material and Methods Netherlands Cancer Registry incidence data (1989–2008) were employed. Patients (N=57 817) diagnosed melanoma in this period were followed. Follow-up censored at second melanoma, death or end of study. Standardised incidence ratio (SIR) was used expressing RR compared to the general population. Sex- and follow-up-specific SIR were computed under for both first and second in situ and invasive melanomas. Cox regression model which contains age at diagnosis, sex, Breslow thickness, and follow-up periods was constructed to estimate relative excessive risk melanoma risk.

Results During a median of 3 yrs of follow-up time, 1985 patients diagnosed for a second melanoma. After both in situ and invasive melanoma, inflated risk for a second melanoma was observed: after a first in situ melanoma, the risk to develop a subsequent melanoma was 16.3 (SIR), 95% CI 14.7 to 17.9. Following an invasive melanoma, risk was 13.3 (SIR), 95% CI 12.6 to 14.1. Elevated risks were observed in all follow-up periods (0–1 yr, 2–5 yr, 6–10 yrs, 10–15 yrs, 16–20 yrs) in both sexes. Age at diagnosis, sex, Breslow thickness, were shown to explain the excess risk observed in those follow-up periods.

Discussion and Conclusion Based on the persistently high risk of melanoma among melanoma patients, a long-term follow-up schedule is needed for both patients and clinicians.

P2-162 BONE ACCRUAL AT THE FOREARM DURING ADOLESCENCE: IS PREVENTION LIKELY TO WORK?

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Introduction Whether bone quality is essentially modifiable or tracks predictably up to adulthood is unclear. We aimed to identify a biological timing when interventions may have optimal impact on future bone properties.

Methods Participants were 709 girls from a cohort of adolescents born in 1990 and evaluated at 13 and 17 years-old. Evaluations consisted of structured questionnaires including gynaecologic age (GA) and physical evaluations comprising height, weight, body composition (bioelectric impedance) and bone mineral density (BMD) at the forearm (dual-energy x-ray absorptiometry). Our outcome was BMD variation during follow-up. We used linear regression to estimate its associations with baseline BMD and anthropometry, in four GA classes at baseline: ≤−1, 0, 1 and ≥2 years relative to menarche.

Results Mean (95% CI) annual BMD variation from 13 to 17 years-old was highest in the earliest GA group (0.030 (0.028; 0.032) g/cm^2-year) and lowest in the oldest GA (0.018 (0.016; 0.019)). Pearson's correlation between baseline BMD and its increase varied from −0.12 in the youngest to −0.45 in the oldest GA. After adjustment (baseline BMD, weight, fat mass and height) and standardisation, BMD variation in the lowest GA was associated with baseline BMD (−2.70 (−5.29; −0.108) per SD), but essentially with baseline weight (11.4 (0.523; 22.2)) and fat mass (−10.0 (−19.2; −0.912)). In the highest GA, BMD variation was strongly determined by baseline BMD (−5.44 (−7.20; −3.69)) but not by anthropometric variables.

Conclusion Bone quality tracking should be measured relative to GA. Bone accrual seems prone to modification, especially in earlier gynaecologic ages.

P2-163 MORTALITY AFTER PRENATAL EXPOSURE TO THE DUTCH FAMINE OF 1944–1945

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Introduction Some studies have examined long term health effects of famine exposure during pregnancy but little is known about possible effects on adult survival.

Methods We selected men with prenatal exposure to the Dutch famine of 1944–1945 from military examinations records (n=408 015) for births 1944–1946 in the Netherlands. We included men exposed in the immediate post-natal period (n=8225) and in the third (n=8197), the second (n=6809), and the first trimester of pregnancy (n=4666). We also selected men exposed around conception (n=7727). Unexposed men born before or after the famine or outside the famine area were selected as controls.

Results We first linked 82% of the selected sample population (n=45 000) to national population records from the Netherlands Statistical Office for 2004–2009. These provide current vital status and cause of death where applicable. Successful linking was unrelated to famine exposure status or to indicators of social class. The remainder of the sample is now being traced at the Netherlands Central Bureau of Genealogy for deaths that took place prior to 2004. To date, 89% of the study population has been traced in either of these registries, covering deaths from 1967 to 2009. Among those traced, mortality until 2009 was 9%. In 24%, cardiovascular disease was the primary cause of death, in 50% cancers, and in 26% other causes.

Conclusions Our findings show that long term tracing of vital status and cause of death is possible in this environment.

P2-164 HUMAN PAPILLOMAVIRUS, OTHER SEXUALLY TRANSMITTED INFECTIONS AND RISK OF CERVICAL CANCER. A NORDIC JOINT STUDY

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Introduction Human papillomavirus (HPV) is considered necessary cause of invasive cervical cancer (ICC), but relations between different HPV types and other sexually transmitted infections in cervical carcinogenesis are unresolved. The CCRPB-EU Network conducted a large study, aiming to assess how major high- and low-risk HPV types, 16, 18 and 6, and possible cofactors, *Chlamydia trachomatis* and herpes simplex virus type 2 (HSV-2), interact in the aetiology of cervical cancer.

Methods A case-control study was nested in four Nordic serum banks containing serum samples from approximately 1 000 000 women. Linkage to cancer registries resulted to 604 ICC cases diagnosed after serum sampling. Five controls were matched to bank, age at sampling and storage time. IgG antibodies specific for HPV types, *C trachomatis* and HSV-2 were determined, and tobacco smoke exposure measured by serum cotinine, and HPV DNA in cancer tissue PCR-tested. ORs were estimated by conditional logistic regression, and adjusted for cotinine and for HPV16, HPV18 and *C trachomatis*, when applicable.

Results Seropositivity for HPV16 did not confer any increased risk for HPV18 DNA positive cancer and HPV18 seropositivity had no association with HPV16 DNA positive cancer. HPV6 had no effect on its own but an antagonistic joint effect with HPV16. HSV-2 had little or no association. *C trachomatis* had a strongly increased risk for cervical cancer, which remained also among HPV18 seropositives.

Conclusions Type-specific HPV DNA persistence is important in cervical carcinogenesis. HSV-2 is possibly not a cofactor, but *C trachomatis* is probably a strong cofactor for ICC.

P2-165 UNINTENTIONAL INJURIES AT HOME AMONG PRESCHOOL CHILDREN AND EMPLOYMENT STATUS OF THEIR MOTHERS IN KERALA, INDIA

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Introduction Unintentional injuries are a serious public health problem worldwide as they are leading causes of death and disability in early childhood. In India, there are not many researches done in this area which hampers efforts to identify the risk factors and thus possibilities of prevention.

Objectives To find out whether there is an increased risk of sustaining unintentional injuries at home among preschool children of employed mothers.

Methods An unmatched case-control study was done in several departments of a tertiary care hospital in Trivandrum, Kerala, India. Cases were children of age 1–5 years who attended the casualty of this hospital, with complaints of unintentional injuries where as controls included those children of the same age group who attended the same centre with complaints of illness other than injuries. Caretakers were interviewed using a pretested peer reviewed structured interview schedule. Data were entered in EpiData and analysed in SPSS version 14.

Results Mothers of 38 children (25.3%) out of the 150 cases were employed, compared to 19 children (12.7%) out of the 150 controls. 25/38 children of working mothers who got injured were boys. Children with employed mother were found to be at a higher risk of developing unintentional injuries (OR: 2.3; 95% CI 1.3 to 4.3).

Conclusion Preschool children of employed mothers are at a higher risk of sustaining injuries when compared to children of unemployed mothers. Steps should be taken to address the lack of supervision of these children during mothers' working hours.